Construction Project Management from the Owner’s Perspective

Presented at:
IMUA 2013 Annual Meeting
May 21, 2013
Agenda

- Introduction to Risk Management
- Risk through the Project Life Cycle
  - Project Development
  - Project Delivery
- Risk Management Summary
- Lessons from Losses
- Q&A
“Coming together is a beginning; keeping together is progress; working together is success.”

Henry Ford
Principal Parties - as Perceived

The perceived roles:

- **Owners**
  - Finance it

- **Design Professionals**
  - Design it

- **Contractors/Subcontractors**
  - Build it
The Parties, by Adhering to their Roles & Responsibilities, Create a System of Checks and Balances that Promotes Teamwork and Ensures a Successful Project
Mitigation of Risk in Construction: Strategies for Reducing Risk and Maximizing Profitability
Mitigation of Risk in Construction

Most Significant (Unprompted) Risks

- Changes in schedule/scope creep
- Budget/cost overruns
- Project approval process
- Safety
- Site conditions
Mitigation of Risk in Construction

Top-Line Recommendations to Improve Bottom-Line Performance:

- Address risk early in the project
- Communicate throughout the project
- Implement a Risk Assessment & Mitigation process
- Embed Risk Management into your firm’s culture
- Engage in activities to reduce likelihood of litigation
- Assess value of a more formal collaborative process
Key Conclusions / Findings:

- Effective risk management and mitigation are essential to achieve continued success in construction.

- Good project management must include good risk management.

- Risk fundamentally results from who a firm works with and how they conduct their work.
Mitigation of Risk in Construction

Failure to manage and mitigate risk has real consequences

- Firms experience delays on nearly 1 in 4 projects (24%)
  - average delay of 17% of total project schedule

- Almost 1/5 of projects (19%) come in over budget
  - average overrun of 14% of total project cost

- 11% of projects experience disputes, with an average claim over $3 Million
Risk Impacts

Some economic effects of property losses

- Direct and Indirect Loss Costs
- Productivity and quality issues
- Employee and public injury exposures
- Schedule delays
- Loss cost reduction benefits with Property Preservation Planning (PPP)
Risk Management

➢ Risk Management – Forward Looking

• Begins at project inception
• Develop and implement project controls
• Proactive monitoring of the project
• Early detection and resolution of impacts

Intended Outcomes:

• Minimize Change Orders
• Mitigation of Delay
• Claims and Loss Avoidance
• Ultimate Goal – “On Time and On Budget”

➢ Claims - Backward Looking
Risk Identification

➤ Types of Risk
  • Known
  • Unknown but predictable
  • Unknown and unknowable

➤ Identification
  • Sources
  • Potential events
  • Symptoms
Types of Risks

- Physical Risks
- Capability Related Risks
- Economic Risks
- Time Related Risks
- Engineering and Construction Risks
- Legal and Contract Administration Risks
Risk Response & Considerations

- **Risk Response**
  - Work-arounds
  - Avoidance
  - Mitigation
  - Acceptance

- **Response considerations**
  - Contingency planning
  - Alternative strategies
  - Reserves
  - Allocation
  - Insurance
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➢ Introduction to Risk Management

➢ Risk through the Project Life Cycle
  • Project Development
  • Project Delivery

➢ Risk Management Summary

➢ Lessons from Losses

➢ Q&A
“In preparing for battle, I have always found that plans are useless, but planning is indispensable.”

Dwight D. Eisenhower
Owner’s Management of Risk
Project Development

- Owner’s understanding of Scope, Budget and Process?
- Serial Builder?
- Internal Staffing Plan?
- Consultant Assistance?
- Project Delivery Method selected?
- Risk Register developed?
- How are/will the risks handled?
  - Assigned, assumed, shared, transferred?
Basic Rules of Risk Allocation

- **Risk** belongs to **Owner** unless assigned to another party by contract.

- Risk assignment should be based on who is **best able** to control risk if a situation arises.
Risk Allocation

Risk Allocation in Contracts

- Analyze contract document language during bid period
- Determine how risk is allocated in contract documents
- Identify clauses – risk assignment, risk assumption, risk sharing, risk transfer
- Identify risks and establish risk mitigation strategy
Incomplete/Uncoordinated Plans & Specs

Constructability issues

Design changes during construction

Unrealistic time for completion

Interference with Contractor means and methods

Multitude of changes

Refusal to grant time extensions

Lack of communication
Management of Risk
Before Design

- Designer’s contract
  - Adequate time for contract document development
  - Adequate budget for services during construction
  - Identify ambiguous, “as needed”, “as required” tasks
  - Adequate budget to mitigate potential design conflicts

- Design should **not** be thought of & bought out as commodity
Design Related Risks

- Request becoming more common?
- Design-Build?
- LEG 2/96 > “Consequences”
- LEG 3/96 > “Improvements”
Design Related Risks

- Drawing coordination
- Discipline coordination
- Errors & omissions
- Inadequate review
- Code compliance
- Design calculations
- Stretching competencies
- Subconsultants
Design Related Risk Management

- Proactive quality efforts
- Interdisciplinary checks
- Review procedures
- Quality professional staff
- “Rapid Response” team and/or Protocols
- Open communication between owner & design
Management of Risk
Before Construction

- Establish standard protocols to follow on every project
  - Contract documents QA/QC
  - Document control
  - Cost control
  - Communications

- Review contract documents for details, coordination and constructability

- Proper determination of contract time for construction
Management of Risk
Before Construction

- Establish project specific protocols and incorporate into contract documents
  - Schedule requirements
  - Notification requirements
  - Submittal/Shop Drawing procedures
  - Change order procedures
  - Testing and inspection requirements
  - Communications
  - Time extension / claims
Open Communication

- Emphasis **must** be placed on open communications from project start

- Staff should be rewarded, **not** punished, for bringing problems to light early
  - The earlier, the better!

- Claims mitigated by:
  - Early identification
  - Teamwork in choosing solution
  - Prompt action to resolve issues
Management of Risk
Before Construction

➢ Ensure contract documents adequately identify and assign site risks

  • Existing conditions
  • Subsurface conditions
  • Environmental conditions
  • Underground utilities
  • Access restrictions

➢ Development of qualified construction estimate with project specific contingencies
Bidability and Constructability Review

- Perform bidability and constructability review
  - Applies construction experience to design
  - Use experienced construction managers to review documents prior to bid

- Review design and bid documents from contractor perspective...contractor is user of documents
  - Determine if sufficient information is available to successfully bid and construct THIS project

- Investment in these reviews more than pays for itself in reduced changes and disputes
Selecting the Construction Team

- Due diligence before bid lists established
- Scoring and evaluation methods
- Specific project delivery method experience and expertise
- Subcontractor relationships
- Geographic presence
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Owner’s Management of Risk During Construction

- Schedule reviews
- Progress monitoring
- Submittal and shop drawing review
- Change order review
- Internal and external communication
- Document management
Property Preservation

- Property preservation = protection of property during construction

- Property preservation planning should be an ongoing component of construction project management

- Include “property preservation” when estimating, planning and scheduling project work
Project Management

- Project management team that is proactive in management of subcontracts and property preservation
  - “Values the property preservation process”

- Pre-construction planning to “reduce” property loss exposures
  - “Schedule project activities to reduce loss exposures”

- Implement plans to “better control” property loss exposures during construction.
  - “Mitigation plans for exposures that cannot be eliminated”
THE CAST OF CHARACTERS

OWNER
OWNER’S REPRESENTATIVE
ARCHITECT
OTHER DESIGNERS/CONSULTANTS
CODE OFFICIALS/Inspectors
GOVERNMENT AGENCIES
SUBCONTRACTORS
PROJECT STAFF

PROJECT MANAGER

SURETY
LOCAL COMMUNITY
CREDITORS
SPECIAL INTEREST GROUPS
VENDORS
SUPPLIERS
COMPANY MANAGEMENT
INSURANCE COMPANIES

LAbOR

USERS
The Challenge of Coordination

Project Management
Construction Process Dynamics

- Maintenance of schedule is a priority
- Critical path activities control schedule ("criticality")
- Time is more valuable than money
- Changes in schedule/scope of work create changes in property loss exposures
- Increasing complexity of construction
- Wide range of project stakeholders
Construction Process Dynamics

Project delivery systems

- Traditional design-bid-build
- Design-build, fast track, turn-key
- PPP financial impacts
- Opportunities and challenges
- Incorporate property preservation planning into project design development and project schedule
Common Impacts to Project Performance – Contractor

- Inadequate pre-bid investigations
- Lack of understanding of bid documents and scope of work
- Unrealistic bid
- Unfamiliar with geographic issues
- Poor planning, scheduling, and management of work
- Lack of project specific experience
- Insufficient resources
- Lack of communication
Discuss property preservation (new and existing) at all project scheduling and coordination meetings as formal part of agenda.

Require field supervisory personnel to evaluate property related exposures and monitor protection requirements.

Involve all parties (design, construction, operations) in the property preservation planning process.
1. Confirm subcontractor management controls

2. Require pre-installation reviews for critical equipment and materials

3. Implement severe weather monitoring program and formal notification procedures with emergency response plans
4. Identify weather sensitive equipment during pre-construction planning and progress meetings with contractors

5. Monitor compliance with vendor/manufacturer required storage/warranty requirements

6. Develop and implement contingency plans for delays in material delivery or schedule changes that impact contractor work completion and expose work in progress to damage
7. Evaluate security and access controls to project sites

8. Focus on “elimination” of property loss exposures; if not practical to eliminate exposures, implement and document “control” of exposures

9. Conduct periodic property preservation assessments (similar to safety assessments) of project site

10. Monitor property preservation controls at subcontract interfaces, project boundaries and temporary facilities and structures
Civil works common cause of loss costs

- Flooding
- Temporary structures
- SOE failures
- Ground condition variability

Wind/temporary bracing

Rigging and lifting

Equipment damage
Schedule Reviews

- Detailed baseline schedule review
  - Technical compliance with specifications
  - General composition and content
  - Reasonableness review
  - Achievement of milestones
  - Fabrication and other long lead procurement items

- Track progress on monthly schedule updates
Progress Monitoring

- Track schedule progress against the baseline
- Provide documentation
- Review quality and conformance to contract
- Perform progress reviews
- Monitor payment applications against schedule
- Track projections against budgets
Change Order Review

- Monitor contractor change orders to determine cause of change
- Provide timely response to change order requests
- Maintain accurate change order log
Change Order Review – Owner Changes

- In or out of scope?

- Sources of changes
  - Owner-directed changes
  - Incomplete programming
  - Enhancements vs. clarifications
  - Regulatory revisions
  - Technology changes
Problem Recognition

**Early Warning Signals:**

- Declining manpower levels
- Late deliveries
- Slow/late submittals
- Poor workmanship
- Schedule slippage
- Decreasing production/productivity
- Increase frequency of change requests
Purpose of Notice to Owner

To provide opportunity for owner

- To change their mind
- To mitigate their cost
- To minimize their time impact
- To minimize property loss exposure
- To make calculated & informed business decisions
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Conclusions – Managing Risk Before Construction

- Allow adequate time and budget for design
- Perform bidability, constructability and maintainability reviews
- Perform comprehensive site conditions due diligence
- Perform proactive review of contract documents
- Establish standard protocols
- Establish project specific protocols and incorporate into contract
- Ensure contract documents adequately identify and assign risks
- Develop qualified construction estimates and contingencies
- Establish lessons learned and use them
Conclusions – Managing Risk During Construction

- Perform detailed schedule reviews
- Maintain active progress monitoring
- Provide timely submittal and shop drawing reviews
- Provide timely responses to RFIs and change orders
- Determine impacts of change orders
- Control the change order process
- Facilitate open communication
- Establish standard internal and external communications protocol
- Recognize early warning signals
- Utilize notice for intended purpose
- Establish document management policies
Managing Risk - Underwriters Perspective

Schedule compression and exposure accretion

- Closely monitor concurrent work activities
- Construction sequencing for optimum productivity
- Weather-dependent work activities
- CPM logic change vs. decrease time for critical items
Construction coordination & project interfaces

- Project boundaries and subcontract interfaces
- Overlapping responsibility
- Coordination of all stakeholders
- Maintain sequencing and account for variances
Property Preservation Summary

- Pursue elimination of exposures; if not possible, implement controls to mitigate exposures

- Evaluate construction efforts at project site from macro perspective

- Maintain controls across project boundaries and disciplines
Property Preservation Summary

- Evaluate changes in loss exposure as project progresses

- Monitor contract interfaces, work coordination and construction sequencing

- Review subcontractor management controls and impact of schedule/scope changes
Some economic effects of property losses

- Direct and Indirect Loss Costs
- Productivity and quality issues
- Employee and public injury exposures
- Schedule delays
- Loss cost reduction benefits with Property Preservation Planning (PPP)
Project Risk Management

**Identify**
...Search for and locate risks before they become problems

**Analyze**
...transform risk data into decision making information
...evaluate impact, probability, timeframe
...classify and prioritize risks

**Plan**
...translate risk information into decisions and actions

**Track**
...monitor risk indicators and mitigation actions

**Control**
...correct for deviations from risk mitigation plans

**Communicate**
...keep parties informed of risk activities, emerging risks & risk mitigation
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Lessons from Claims

Topics:

1) Property Claim Basics
2) Builders Risk Claims
3) Business Interruption
4) Case Examples
Property Claim Basics

➢ Before the Loss
  ▪ Evaluate Exposure & Limits
  ▪ Assess risks and obtain proper cover (Perils, Deductibles, Optional coverage)

➢ Initial Decisions
  ▪ Repair/replace
  ▪ As-was; Improve/change; Relocate
  ▪ Business Interruption Ramifications

➢ Proper Claim Documentation
  ▪ Pictures
  ▪ Expense support
  ▪ General ledger/Project Cost reporting
Builders Risk Claims

- Establish completion delay timeframe
  - Developed by construction experts
    - Based on plans, pro-formas, draw submittals, etc.
    - Often point of debate with adjusters & experts

- Identify & measure Soft Costs
  - Defined listing vs. general category
  - Establish incremental vs. normal
  - Develop proper measure of incremental

- Business Interruption
  - Separate endorsement in BR
  - Note any overlap with BR soft costs
  - Unique measurement challenges
Business Interruption

- Program Design
  - Policy Coverage
    - ISO, Manuscript, Company Form
    - Direct vs. Indirect Exposures
  - Values Assessment

- Post-Loss Concerns
  - Claim Team
  - Early Decisions – Impact from PD claim
  - Loss Identification
  - Document Preservation
  - Claim Development

- Claim Issues
  - Revenue/Expense Projections
  - Coverage Concerns
Business Interruption (cont’d)

➢ Extra Expense
  ▪ Expense to Mitigate vs. “Pure” extra expense
  ▪ Excess Operating Costs
  ▪ Mitigation
    • Policy requirement
    • Internal vs. external
  ▪ Expediting Expense

➢ BI claim process
  ▪ Milestones
  ▪ Common Hurdles
Case Study Discussion
QUESTIONS?

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